

REMARKS

In response to the Office action dated May 1, 2007, Applicants respectfully request reconsideration based on the following remarks. Applicants respectfully submit that the claims as presented are in condition for allowance.

Claims 9 – 12 and 17 – 28 are pending in the present application. Claim 29 has been newly added. Claim 29 incorporates the limitations of Figure 1 into it. This amendment was made to better define the invention. Support for this amendment can be found in at least the Figure 1.

Claim 26 was objected to for an inadvertent typographical error. This error has been fixed.

Claims 24 and 25 have been cancelled leaving Claims 9 – 12 and Claims 17 – 23 and 26 – 29 for consideration upon entry of the present amendment.

Reconsideration and allowance of the claims are respectfully requested in view of the following remarks.

Claim Rejections Under 35 U.S.C. § 102

Claims 23 – 28 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,377,249 to Mumford. (Office Action dated 5/1/07; Page 2)

In making the rejection, the Examiner has stated that “With respect to Claim 25, Mumford discloses, the optical cursor control device according to Claim 24, wherein the prism comprises a first area that accepts the lights reflecting from the surface of the worktable adjacent to the case and a second surface (104 r,g,b in Fig. 20) that introduces the lights penetrating the prism onto the optical sensor (clear from Fig. 20)”. (Office Action dated 5/1/07; Page 3) Applicants respectfully disagree.

In the Advisory Action dated 08/02/07, the Examiner has stated that “Applicants argue that Mumford does not disclose that the light that enters the prism is the light that impinges on the optical sensor. The applicants point out to the dispersive prism of Mumford as evidence that the light that enters the prism is not the same light that is presented to the optical sensor.” (Page 3) The Examiner counters this by adding that “the light that enters Mumford’s device could simply be mapped in the claim to the red wavelength and as such it would certainly achieve the limitations of claim 23 as currently claimed.” (Page 3) Applicants respectfully disagree.

Claim 23 is directed to an optical cursor control device light guide that has a first surface that accepts light reflecting from a surface of a worktable adjacent to the case and a second surface that introduces the light penetrating the prism onto an optical sensor; the light guide being disposed at a sidewall of the case for introducing the light reflecting from the surface of the worktable into the case. New Claim 29 is directed to an optical cursor control device according to Claim 23, wherein the first surface and the second surface are parallel to each other.

To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988).

Mumford teaches an electronic light pen used in conjunction with a video display that permits the position of the light pen to be determined with respect to the video display. (see Abstract) Mumford teaches two different embodiments that detail how external light (from the video display) is detected. These embodiments are reflected in the Figures 9 and 10 of Mumford. In both these embodiments, Mumford teaches splitting the light up into its red, green and blue constituents and measuring location based upon these constituents.

In Figure 9, Mumford teaches a prism that collects the external light and decomposes this light into its constituent colors. Mumford thus requires three detectors as can be seen in the Figure 9. In contrast, Claim 23 differs from Mumford's embodiment of Figure 9 in that the light that enters the prism is the light that impinges on the optical sensor, not its respective constituents impinging on respective sensors. (see Figure 1 of the present invention) For this reason at least, the embodiment disclosed in the Figure 9 does not anticipate the claimed invention.

In Figure 10 (which is similar to the embodiment depicted in the Figure 20), Mumford discloses that the light that enters the device is decomposed in to its red, green and blue constituents by using filters 105r, 105g and 105b. (see Col. 12, lines 13 – 46) In contrast, Claim 23 differs from Mumford's embodiment of Figure 10 in that the light that enters the prism is the light that impinges on the optical sensor, not on a filter prior to impinging on a sensor. For this reason at least, the embodiment disclosed in the Figure 10 does not anticipate the claimed invention.

The claimed invention, in contrast, has a light guide that comprises a first surface through which light enters the device and a second surface through which the light that enters the light

guide leaves and impinges upon the sensor. As claimed in Claim 29, the first surface and the second surface are parallel to one another as depicted in the Figure 1, thus preserving the light that enters the light guide in its original form. Claim 29 at least must therefore be patentable over Mumford, since clearly in this situation, the light would not be broken into its constituent colors or would require mapping as pointed out by the Examiner.

With regard to the Examiner's comment in the advisory action that "the light that enters Mumford's device could simply be mapped in the claim to the red wavelength", the Applicants would like to state that that is exactly what Mumford teaches. Mumford teaches splitting the light into its constituent colors and mapping these respective colors to a particular detector. Applicants do not split the light into its constituent colors. In addition as claimed in Claim 29, the first surface being parallel to the second surface ensures that the light is not split up into its constituent colors.

Thus in summary, Mumford teaches splitting the light up into its red, green and blue constituents and measuring location based upon these constituents. The claimed invention does not split up light into its constituent colors. Since neither the embodiment disclosed in the Figure 9 or the Figure 10 by Mumford teaches all elements of the claimed invention, Mumford cannot anticipate the claimed invention. Applicants respectfully request a withdrawal of the rejection and an allowance of the claims.

Claim Rejections Under 35 U.S.C. § 103

Claims 18 and 21 – 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,618,038 to Bohn in view of U.S. Patent No. 6,741,234 to Son. (Office Action dated 5/1/07; Page 4) Applicants respectfully disagree.

In making the rejection, the Examiner has stated that "Bohn teaches a light guide (108 in fig. 7) disposed at a sidewall of the case (clear from fig. 7) introducing lights into the case". (Office Action dated 5/1/07; Page 4) Applicants respectfully disagree.

In the advisory action, the Examiner has stated that "Applicants specifically argue that Bohn does not disclose a light guide". (page 3) Applicants contend that the Examiner's has taken the Applicants comments out of context. As will be seen, the Applicants comments were also directed to the fact that neither Bohn nor Son teaches introducing external light into the case. Both Bohn and Son generate the light inside the case. This is not external light, but rather a

reflection of light that is generated internally. Further, neither Bohn nor Son teach a light guide that has a protrusion as is presently claimed.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art and that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Claim 18 is directed to an optical cursor control device that comprises a light guide disposed at a sidewall of the case, introducing external lights into the case and including a protrusion outwardly protruded from the case, the light guide directly accepting the external lights through the protrusion to obliquely irradiate lights penetrating the light guide onto a surface of the worktable through an opening formed in a lower panel of the case.

Bohn is directed to a computer mouse that has a plurality of motion sensors. (see Abstract) Bohn in its Figures 3, 5 and 7 shows the light guide 108 as being disposed upon the case and collecting lights that are generated internally within the case. The light is reflected into the case from the bottom and not through a sidewall as presently claimed. (see Figures 3, 5 and 7 of Bohn) Clearly, in these figures, the light guide does not introduce external lights into the case, but rather receives reflected light that is generated internally. For this reason at least, Bohn does not teach all elements of the claimed invention.

Bohn clearly also does not teach a light guide having a protrusion as presently claimed. Where Bohn teaches lenses that are protruded, it clearly appears that they do not function as a light guide. For example in Col. 4, lines 59 – 67, Bohn states:

A lens 108 may protrude from the front portion 104 of the housing 102. A lens 109 may be recessed within the rear portion 105 of the housing 102. A lens 110 may protrude from the left portion 106 of the housing 102. The lenses 108, 109, 110 may serve as light sources to indicate operative modes of the pointing device 100. More specifically, light may enter the lenses from the interior of the housing 102 and may cause them to glow. The lenses may be optical devices that disperse light and, thus, glow when light enters them. As will be described below, light-emitting diodes or other light sources may be used instead of the lenses.

It is clear, from the aforementioned paragraph, that where Bohn teaches protruding lenses, they are not intended to serve as light guides for purposes of detecting location. Bohn in its Figures 3, 5 and 7 clearly depicts an aperture in the case as the point at which reflected internal light is introduced into the case. Bohn clearly does not teach that the external lights enters through the protrusion to obliquely irradiate lights penetrating the light guide onto a surface of the worktable through an opening formed in a lower panel of the case. For this reason also, Bohn does not teach all elements of the claimed invention.

Son, like Bohn, teaches an optical mouse that can move a cursor on a display screen of a computer by totally reflecting light, which is emitted from a light source disposed within the case. (see Abstract and see Figures 7 – 9) Son, in its Figures 7 – 9, depicts an aperture as the exit and entry point for light. In Son, as in Bohn, the light guide does not introduce external lights into the case, but rather receives reflected light that is generated internally. For this reason at least, Son does not teach all elements of the claimed invention.

In addition, the light guide disclosed by Son appears to be the prism 30. The light guide does not have a protrusion as presently claimed. For this reason also, Son does not teach all elements of the claimed invention.

Further, since neither Son nor Bohn teach all elements of the claimed invention, there is no motivation to combine references. Even if the references were combined in the manner made by the Examiner, one of ordinary skill in the art would not arrive at the claimed invention.

Applicants therefore believe that the Examiner has not made a prima facie case of obviousness over Bohn in view of Son. Applicants respectfully request a withdrawal of the obviousness rejection over Bohn in view of Son.

Claims 19 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bohn in view of Son and further in view of U.S. Patent No. 6,111,563 to Hines (Office Action dated 5/1/07; Page 4) Applicants respectfully disagree.

In the first instance Claims 19 and 20 are dependent from Claim 18.

As noted above, Bohn and Son do not teach all elements of Claim 18. In particular, Bohn and Son both do not teach a light guide that introduces external lights into the case. The light guide in both Bohn and Son is not located in a side wall and does not protrude from the side

wall. Bohn further does not teach a light guide that directs the light to a sensor. Additionally both Bohn and Son do not teach a light guide that has a protrusion as presently claimed.

Hines teaches an optical reflective mouse or other pointing device for computers that provide an optical signal. (see Abstract) The mouse disclosed by Hines uses only light generated by a computer. (see Col. 2, lines 1 – 4) Hines teaches that any external light is introduced into the housing or case through windows 21 and 22 that are located in the sidewall. However, the light guide of Hines is merely a window and does not serve to guide the light to a sensor. Hines further does not teach accepting the external lights through the protrusion to obliquely irradiate lights penetrating the light guide onto a surface of the worktable through an opening formed in a lower panel of the case. Hines thus also does not teach all elements of the claimed invention.

In addition, Hines teaches a window that is placed at the side-wall, while Bohn and Son teach light guides that are disposed at locations other than the side wall. Bohn and Son thus teach away from Hines. For this reason at least, one of ordinary skill in the art would not be motivated to combine Bohn and son with Hines. Applicants believe that the Examiner has not made a prima facie case of obviousness over Bohn in view of Son and further in view of Hines. Applicants respectfully request a withdrawal of the rejection over Bohn in view of Son and further in view of Hines.

Claims 9 - 10 and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,736,686 to Perret in view of U.S. Patent No. 6,369,866,234 to Rai et al. (Rai) (Office Action dated 5/1/07; Page 7) Applicants respectfully disagree.

Claim 9 is directed to an optical cursor control device having a light concentrating pad wherein a light concentrating plate is attached to an edge of the lower reflecting plate and is separated from the upper transparent plate, wherein the light concentrating plate reflects external light into the optical wave guide through another portion of the sides of the optical wave guide. Figure 3B of the instant application provides an exemplary representation of the claim.

In making the rejection, the Examiner has pointed out to element 47 of Figure 1 of Perret as being the light concentrating plate. The Examiner has stated that “Perret does not teach a light concentrating plate that is attached to an edge of the lower reflecting plate and is separated from the upper transparent plate. Rai however teaches a light concentrating plate that

is attached to an edge of the lower reflecting plate and is separated from the upper transparent plate.” (Office Action dated 05/01/2007, page 8)

In making the rejection, the Examiner has stated that “At the time of the invention it would have been obvious to one of ordinary skill in the art to attach the light concentrating plate of Perret to an edge of the lower reflecting plate and separate from the upper transparent plate as taught by Rai.” (Office Action dated 05/01/2007, page 9)

Perret teaches an illumination apparatus for a digitizer tablet that includes a support structure and a solid sheet optical light guide supported by a support structure. (see Abstract) Perret in its Figure 1 teaches a reflecting tape 47 that surrounds the light source 16. Perret further teaches a virtual light source 52 that is disposed on the opposing end of the light guide plate from the end, which is proximate to the light source 16.

The light source 16 is identified as comprising a fluorescent light bulb. (Col. 4, lines 16 – 17) The reflecting tape thus reflects light generated internally by an artificial light source, i.e., the fluorescent light bulb. Perret does not teach a light concentrating plate that reflects external light. The claimed invention in contrast is directed to a light concentrating plate that reflects external light. For this reason at least, Perret does not teach all elements of the claimed invention.

Perret further teaches away from the claimed invention. The reflecting tape 47 of Perret does not contact the lower reflecting plate, but rather contacts the upper diffuser plate 49. As can be seen in the Figure 1, a heat transfer spacer 42 contacts the light source 16 in order to dissipate heat. Thus, the reflecting tape 47 does not contact the lower reflecting plate as presently claimed.

Rai teaches an improved liquid crystalline display device of the type having an LCD panel. (see Abstract) Rai teaches a light source 50 present in the light guide plate 20 of the liquid crystalline display. Rai in its Figures 3, 5 and 6 teaches that the end of the light guide plate that is opposed to the end that has the light source 50 has a light transmitter 21 and a light collecting lens 61. (see Col. 4, lines 8 – 10) The light collecting lens 61 has an inclined surface that extends diagonally upwards from the light transmitter 21. ((see Col. 4, lines 24 – 26)

Rai in the first instance does not teach a light concentrating plate that reflects external light, but rather teaches a light collecting lens that transmits external lights. In the Figures 3, 5 and 6, Rai shows that light is transmitted into the light guide plate and not reflected into the light

guide plate as presently claimed. Rai therefore does not teach all elements of the claimed invention. Rai further does not teach or suggest that the light concentrating plate is attached to an edge of the lower reflecting plate. The Figures 3, 5 and 6 of Rai do not show any attachment between the light concentrating plate and the lower reflecting plate. At best, in the Figures 3, 5 and 6, the light reflecting lens could contact the lower reflecting plate of Rai. There is no attachment of the lens to the lower reflecting plate taught or suggested by Rai.

Rai in not teach a light concentrating plate that reflects external light does not make up for the deficiency of Perret. Further neither Rai nor Perret teach an attachment of the light concentrating plate to the lower reflecting plate.

Rai in teaching the use of light source 50 also teaches away from the claimed invention. As noted above, the light concentrating plate of the claimed invention concentrates only external light, while the light concentrating plate of Rai concentrates both internal light generated by the light source 50 as well as light generated externally. Rai specifically states that the use of only external light is unsubstantial and therefore one of ordinary skill in the art would require the use of an artificial light source. (Col. 4, lines 39 – 42)

In addition, one of ordinary skill in the art would not be motivated to combine Perret with Rai since they teach away from each other. Perret teaches only the use of internally generated light from light sources that surround the light guide plate on three sides. (see Figure 2) the fourth side has a virtual bulb 52, which as disclosed in Col. 5, lines 12 – 14, comprises a highly reflective surface. Thus the highly reflective virtual bulb 52 reflects light from the three light sources located on the three sides of the light guide plate. Perret, on the other hand, teaches that the light collecting lens 61 permits external light to be transmitted into the light guiding plate. If the virtual bulb 52 of Perret is replaced by the light collecting lens 61 of Rai, it follows that the light entering the light guiding plate of Perret would interfere with the light produced by the three light sources and would therefore cancel out some of the brightness generated by the three light bulbs and the reflector. One of ordinary skill in the art, aware of this possibility, would not automatically arrive at this combination because the total light emanating from the upper surface of the light guide plate may actually be reduced by interference produced as a result of this arrangement.

In sum, the Applicants believe that the Examiner has not made a *prima facie* case of obviousness over Perret in view of Rai. Applicants respectfully request a withdrawal of the obviousness rejection and an allowance of the claimed invention.

Claims 11 - 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,736,686 to Perret in view of U.S. Patent No. 6,369,866,234 to Rai et al. (Rai) and further in view of U.S. Patent No. 4,521,772 to Lyon. (Office Action dated 5/1/07; Page 9) Applicants respectfully disagree.

As noted above, Perret and Rai both do not teach all elements of the claimed invention. Lyon teaches a cursor control device or an optical mouse. (see Abstract) Lyon does not teach a light concentrating plate attached to an edge of the lower reflecting plate and separated from the upper transparent plate. Lyon does not make up for the deficiency of Perret or Rai. For this reason at least, the Applicants believe that the Examiner has not made a *prima facie* case of obviousness over Perret in view of Rai and further in view of Lyon.

Applicants respectfully request a withdrawal of the obviousness rejection and an allowance of the claimed invention.

Conclusion

All of the objections and rejections are herein overcome. In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. No new matter is added by way of the present Amendments and Remarks, as support is found throughout the original filed specification, claims and drawings. Prompt issuance of Notice of Allowance is respectfully requested.

The Examiner is invited to contact Applicants' attorney at the below listed phone number regarding this response or otherwise concerning the present application.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorneys.

Respectfully submitted,

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